

COLORADO DEPARTMENT OF PUBLIC HEALTH
AND ENVIRONMENT

HAZARDOUS MATERIALS AND WASTE MANAGEMENT DIVISION

SITE INSPECTION

DRAFT

ANALYTICAL RESULTS REPORT

CEMENT CREEK WATERSHED (CERCLIS ID # CO0001411347)

SAN JUAN COUNTY, COLORADO



Prepared by:
Camille Farrell
April, 1998

Approved: _____ Date: _____
Rick Brown, Program Manager, CDPHE

Approved: _____ Date: _____
Pat G. Smith, Site Assessment Manager, EPA

TABLE OF CONTENTS

1.0	<u>INTRODUCTION</u>	1
2.0	<u>SITE DESCRIPTION</u>	3
3.0	<u>DATA VALIDATION AND INTERPRETATION</u>	6
44.0	<u>SOURCE CHARACTERISTICS</u>	7
4.1	Solid Source Samples	7
4.2	Aqueous Source Samples	7
5.0	<u>SURFACE WATER PATHWAY</u>	8
5.1	Surface Water Sample Locations	9
5.2	Surface Water Analytical Results	9
5.3	Surface Water Analytical Results by Stream Segment	13
5.3.1	Upper Cement Creek	13
5.3.2	The North Fork of Cement Creek, Cement Creek's Confluence with North Fork and the Cement Creek Below the Treatment of the American Tunnel	15
5.3.3	Cement Creek's Confluence with the South Fork, the South Fork and tributaries: Minnehaha Creek; the Middle Fork of Cement Creek; and Cement Creek below the Confluence with Dry Gulch	16
5.3.4	Prospect Gulch and Cement Creek's Confluence with Prospect Gulch	19
5.3.5	Animas River	23
6.0	<u>SOIL EXPOSURE, AIR, AND GROUND WATER PATHWAYS</u>	23

7.0 SUMMARY AND CONCLUSIONS

25

8.0 REFERENCES

29

LIST OF FIGURES

- FIGURE 1 Cement Creek Watershed Study Area (USGS Quadrangle excerpt)**
- FIGURE 2 Cement Creek Watershed - Upper Cement Creek Sampling Sites**
- FIGURE 3 Cement Creek Watershed - Lower Cement Creek Sampling Sites**
- FIGURE 4 Cement Creek Watershed - Prospect Gulch Sampling Sites**
- FIGURE 5 Cement Creek Watershed - Sampling Locations**
- FIGURES 6-27 Metals Loading vs. Acidity vs. Sediment Concentration for
Aluminum, Cadmium, Copper, Iron, Lead, Manganese, and Zinc**

LIST OF TABLES

- TABLE 1 Cement Creek Solid Source Samples - Total Metals**
- TABLE 2 Cement Creek Aqueous Source Samples - Total Metals**
- TABLE 3 Cement Creek Surface Water and Sediment Samples -
Organic Compounds above Detection**
- TABLE 4 Cement Creek Surface Water Samples - Total Metals plus Cyanide**
- TABLE 5 Cement Creek Surface Water Samples - Dissolved Metals and Nutrients**
- TABLE 6 Cement Creek Surface Water Samples - Total Metals Loading**
- TABLE 7 Cement Creek Sediment Samples - Total Metals plus Cyanide**
- TABLE 8 Cement Creek Drinking Water Samples - Total and Dissolved Metals**

LIST OF APPENDICES

- APPENDIX A: Cement Creek Watershed Sampling Activities Report**
- APPENDIX B: DMG Sample Description, Location, Rationale and Analyses Requested**

APPENDIX C: DMG Waste Rock Field Leachate and Laboratory Analytical Results

APPENDIX D: Validated Analytical Data

APPENDIX E: Drinking Water Sampling Results - Letters to Homeowners